REMARKS

Applicants appreciate the detailed examination evidenced by the Office Action mailed March 29, 2005 (hereinafter "Office Action"). Applicants have amended the Abstract as suggested in the Office Action. Applicants particularly appreciate the indication that Claims 10, 18-20, 29-31, 38, 39, 43, 44, 47, 48, 52, 55, 56, 62, 71 and 90-96 recite patentable subject matter. In light of the indication of the potential allowability of Claim 71, Applicants have amended independent Claim 69 to incorporate the recitations of Claim 71 and have canceled Claim 71, thus placing Claims 69, 70 and 72-85 in condition for allowance. Applicants have also amended Claim 39 to correct a minor typographical error. Applicants respectfully traverse the rejections of the other claims for at least the reasons discussed in detail below.

Independent Claims 1, 12, 32, 50, 58, 86 and 99 are patentable

Independent Claims 1, 12, 32, 50, 58, 86 and 99 stand rejected under 35 U.S.C. § 103 as being unpatentable over Published PCT International Application WO 00/35112 to Atarius (hereinafter "Atarius"). Claim 1 recites:

> A method of processing a spread spectrum signal, the method comprising:
> correlating the spread spectrum signal with a spreading sequence at a first plurality of correlation times to produce a first plurality of time-offset correlations;
> processing the first plurality of time-offset correlations to produce a first symbol representation for a symbol;
> determining a first quality for the first symbol representation; and
> responsive to the determined first quality, determining whether to further process the first symbol representation or to process a second symbol representation for the symbol generated from the spread spectrum signal.

The Office Action asserts that Fig. 3 of Atarius teaches all of the recitations of Claims 1, 12, 32, 50, 58, 86 and 99, except "symbols." *See* Office Action, pp. 2 and 3. More particularly, the Office Action asserts that Fig. 3 of Atarius teaches "determining a first quality for the first symbol representation (Atarius fig. 3: determining whether the output 362 meets a threshold 364)" and:

> . . . determining whether to further process the first symbol representation (Atarius fig. 3: if the input to 364 is above the threshold then there will be a data output out of 364 that will undergo further processing) or to process a second symbol representation (Atarius fig. 3: if the input 364 is below the threshold then the system will wait to output till it can get samples which after the fingers and multiplies and accumulation are above a threshold by processing the next 112) for the symbol (Atarius fig. 3: 112; pg. 3 line 25: digital samples) generated from the spread spectrum signal (Atarius fig. 3: input signal; pg. 1 line 4: spread spectrum).

Office Action, p. 3. Respectfully, this represents a misunderstanding of the cited material from Atarius and, consequently, a misapplication of Atarius in rejecting the claims.

The Office Action appears to assert that the threshold device 364 is a device that "tests" the output of the accumulator 362 and only produces a symbol estimate if the output of the accumulator 362 meets this "test"; if the "test" is failed, the system "will wait to output" until the threshold is met. Applicants respectfully submit that this is incorrect. Actually, the threshold device 364 appears to be what is sometimes referred to as a "hard" decision device, which decides what symbol *value* (e.g., for binary symbols, "1" or "0") to assign to a given symbol in response to comparing an output of the accumulator 362 corresponding to the symbol to a threshold. For example, if the value of the output of the accumulator 362 exceeds the threshold, a first value is assigned to the symbol, while, if the value of the output of the accumulator 362 is less than the threshold, a second value is assigned to the symbol. As noted in p. 4 line 7 of Atarius, the output of the accumulator 362 may alternatively be fed to "a quantizer that outputs soft information," i.e., a device that outputs a probabilistic value that indicates the relative likelihood that a particular symbol has particular values (e.g., for binary symbols, a relatively probability that the symbol is a "1" or a "0").

In contrast, Claim 1 recites "determining whether to further process the first symbol representation or to process a second symbol representation" based on a quality determination for at least one of the representations. For example, if the "symbol representations" are "hard values", the determination of quality may involve, for example, generating a decoding metric which can be used to decide which symbol representation to process (see, e.g., FIGs. 3 and 4 and discussion thereof on pp. 9-11 of the present application). The cited material from

Atarius does not disclose or suggest the recited processing decisions based on a quality determination. Rather, as discussed above, the cited portions of Atarius show a conventional symbol estimation process, in which symbol estimates are simply produced from the output of an accumulator without any selection from among symbol estimates based on the quality of the estimates. Accordingly, Applicants submit that Atarius does not disclose or suggest all of the recitations of Claim 1, and for at least this reason, Claim 1 is patentable over Atarius. Applicants further submit that Claims 12, 32, 50, 58, 86 and 99 are patentable over Atarius for at least similar reasons.

Additional features patentably distinguish independent Claims 1, 32, 50, 58, 86 and 99 from Atarius. For example, Claims 1, 32 and 99 recite choosing between first and second symbol representations *for the same symbol*. Such recitations are clearly neither disclosed nor suggested by the cited portions of Atarius. Claims 50, 58 and 86 recite the use of *respective first and second demodulation processes* to produce first and second symbol representations from which quality-based processing decisions are made. Such recitations are neither disclosed nor suggested by the cited material from Atarius. For at least these additional reasons, Applicants submit that Claims 1, 32, 50, 58, 86 and 99 are patentable over Atarius.

Amended Independent Claim 69 is in condition for allowance

Applicants have amended independent Claim 69 to incorporate the recitations of Claim 71, which was indicated as reciting patentable subject matter. Applicants therefore submit that independent Claim 69 is in condition for allowance. Claim 71 has been canceled.

The dependent claims are patentable

Applicants submit that dependent Claims 2-11, 13-31, 33-49, 51-57, 59-68, 70, 72-85, 87-98, and 100-108 are patentable at least by virtue of the patentability of the various ones of independent Claims 1, 12, 32, 50, 58, 69, 86 and 99 from which they depend. Applicants also appreciate the indication that dependent Claims 10, 18-20, 29-31, 38, 39, 43, 44, 47, 48, 52, 55, 56, 62 and 90-96 have additional bases for patentability. Applicants submit that several other of the dependent claims are also separately patentable.

For example, Claim 9 recites "wherein the first symbol representation is an output of a RAKE demodulation process and wherein the second symbol representation is an output of a generalized RAKE (G-RAKE) demodulation process." In rejecting Claim 9, the Office Action cites page 2, lines 1-15 of the present application, which refer to US Patent No. 5,572,552. However, the Office Action provides no evidence from the prior art of a teaching or suggestion that the proposed combination Atarius and this material from the Background of the Invention section of the present application would be feasible, let alone desirable. For example, the Office Action provides no evidence from the prior art as to how the RAKE and G-RAKE processes described in US Patent No. 5,572,552 the would be implemented in the structure shown in the cited Fig. 3 of Atarius. For at least these reasons, Applicants submit that Claim 9 is separately patentable. Similar reasons support the separate patentability of Claims 27, 49, 57, 60, 88, and 107.

Applicants note that no specific grounds for rejection of Claims 40-42 are provided in the Office Action, and further submit that these claims are separately patentable for at least similar reasons to those supporting the separate patentability of Claims 29-31.

The Office Action Summary indicates that Claims 63 and 64 are rejected. However, Applicants submit that these claims should have been indicated as potentially allowable at least by the indicated allowability of Claim 62 from which they depend, and further point out that no specific grounds for rejection of these claims has been provided in the Office Action. In addition, Applicants submit that Claims 63 and 64 are separately patentable for similar reasons to those supporting the separate patentability of Claims 43 and 44.

Applicants request acknowledgement of the Information Disclosure Statement filed June 5, 2002
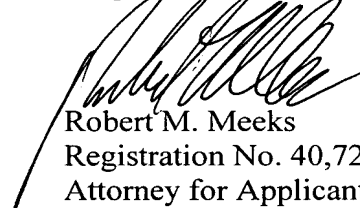
Applicants filed an Information Disclosure Statement (IDS) on June 5, 2002. A copy of this IDS is attached hereto, along with a copy of the returned postcard indicating receipt at the United States Patent and Trademark Office. Applicants request consideration of the references cited in the IDS, and acknowledgment of such consideration by return of a copy of the initialed form PTO-1499.

Conclusion

Applicant submits that the objections to the Abstract and the rejections of the claims are overcome for at least the reasons discussed above, and that the claims are, therefore, in condition for allowance, which is respectfully requested. Applicant encourages the Examiner to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

Robert M. Meeks
Registration No. 40,723
Attorney for Applicant(s)

USPTO Customer No. 20792
Myers Bigel Sibley & Sajovec
Post Office Box 37428
Raleigh, North Carolina 27627
Telephone: 919/854-1400
Facsimile: 919/854-1401